

U.S. Serial No. 10/086,775
Reply to Office Action of: June 15, 2006
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REMARKS

Applicants have amended claim 1 to indicate that the reduction in particulate emissions exhibited by their invention is an improvement over the emissions observed using Swedish Class I Diesel Fuel. Support for the amendment can be found throughout the specification with specific mention made to the Examples.

In their communication of April 3, 2006, Applicants amended claims 5 and 12 to depend from claims 1 and 11 respectively. Inadvertently, the amendment labeled claims 5 and 12 as "Original." In this amendment, claims 5 and 12 are labeled as "Previously amended" to reflect the prior amendment.

The Examiner rejected claims 1, 5-10 and 12 under 35USC103(a) as being unpatentable over WO 9912021 in view of WO 9907465. Applicants respectfully request the Examiner to reconsider and withdraw that rejection.

WO 9913031 is concerned with forming stable, macro-emulsions of hydrocarbon dispersed in water. WO 9913031 teaches that less surfactant is required to form a hydrocarbon-in-water emulsion from a mixture of an FT and conventional fuel than from either fuel alone. As noted by the Examiner, WO 9913031 states that aqueous fuel emulsions are known to reduce pollutants. There is no disclosure or suggestion, however, that combusting an FT hydrocarbon-in-water emulsion having hydrocarbon particles that are substantially uniform in size and in the range of about 0.1 to about 1.0 microns results in better particulate emissions when compared to Swedish Class I Diesel Fuel.

Additionally, while WO 9913031 teaches shearing a hydrocarbon, water and surfactant to form an emulsion, there is no disclosure or suggestion to shear for a time sufficient to produce hydrocarbon particles that are substantially uniform in size and in

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the range of about 0.1 to about 1.0 microns. The Examiner attempts to overcome this deficiency in the primary reference by citing WO 9907465.

WO 9907465 is directed to water-in-hydrocarbon emulsions and not hydrocarbon-in-water emulsions. In applicants' emulsion, the size of the hydrocarbon particles is what matters; in the WO 9907465 reference, the size of the water particles is what matters. Additionally, to achieve the particle size referred to in WO 9907465, both the emulsifier and a coupling agent are required in a specified ratio. The Examiner in disregarding these distinctions, is taking a part of the reference out of context in an attempt to reconstruct applicants' invention. Such hindsight reconstruction, of course, is improper.

A key fact is that neither references, alone or in combination, disclose or suggest a method for achieving better particulate emission properties than are achievable with Swedish Class I Fuel by combusting the emulsion defined by applicants' claims. The Examiner's statement that it would be obvious to optimize shearing conditions to obtain the best viscosity results is without any support or merit. There is no disclosure or suggestion in the references that a specific particle size distribution and a specific emulsion viscosity can result in a composition that when combusted exhibits less particulate emissions than that exhibited with Swedish Class I Fuel.

The Examiner's attempt to assert a *prima facie* case of obviousness fails to meet the three criteria set forth in MPEP 2143. These can be summarized as the need for:

- (1) Some suggestion in the reference to modify or combine them;
- (2) Some reasonable expectation of success; and
- (3) A suggestion of all of the claim limitations in the references.

Not one of these criteria has been met by the Examiner.

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In view of the foregoing comments and amendments, Applicants request the Examiner to pass the case to issue.

Respectfully submitted,



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☒ Pursuant to 37 CFR 1.34(a)

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